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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/314,243	Applicant(s) VERBIN ET AL.	
	Examiner Daniel Swerdlow	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20-26 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 20-26 and 28-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Gross et al. (US Patent 6,266,348). Gross discloses: monitoring transmission characteristics (i.e., periodically initiating detection routines) (column 10, lines 1-3); detecting disturbance events from changes in error rate characteristics (i.e., determining whether a change in modem performance has occurred) (column 10, lines 9-14); where the change in error rate is due to an off hook event (i.e., characterizing change in modem performance as an indication of change in telephone hook status) (column 10, lines 25-29).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1 through 13, 17 and 23 through 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amrany (US Patent 6,192,109) in view of Ko et al. (US Patent 6,151,335)

5. Regarding Claim 1, Amrany discloses a method for improved DSL communication comprising: determining that a phone was taken off hook or put back on hook (i.e., a status of a telephone hookswitch) (column 4, lines 12-16); in response performing a restart (i.e., determining whether retraining is indicated) (column 4, lines 16-19); and in response, adjusting transmit level (i.e., determining whether power level adjustment is indicated) (column 4, lines 16-19). Therefore, Amrany anticipates all elements of Claim 1 except the use of line current measurement to determine hookswitch status. Ko discloses the use of line current measurement to determine hookswitch status for the purpose of adjusting parameters of a DSL line (column 11, lines 43-50). Ko further discloses that the current measurement method is particularly suitable for situations with multiple stations on a line (column 11, lines 59-63). It would have been obvious to one skilled in the art at the time of the invention to apply line current-based hook state determination as taught by Ko to the method taught by Amrany for the purpose of realizing the aforesaid advantage.

6. Regarding Claim 2, Amrany further discloses performing a restart (i.e., initiating a retraining routine) (column 4, lines 16-19) and adjusting a transmit (i.e., power) level (column 4, lines 16-19).

7. Regarding Claim 3, Amrany further discloses restarting (i.e., retraining) in response to indication (i.e., determination) of hook state (column 4, lines 12-19).

8. Regarding Claim 4, Amrany further discloses determination of change in hookswitch status (column 4, lines 12-16).

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9. Regarding Claim 5, Amrany further discloses in response to indication of change, adjusting transmit level, reference impedance and matching impedance (i.e., determining whether a different modem configuration profile is appropriate and selecting the different profile) (column 4, lines 16-19).
10. Regarding Claim 6, Amrany further discloses detecting that equipment is protected with micro data filters (i.e., determining whether an inline filter is installed) (column 3, lines 38-43).
11. Regarding Claim 7, Amrany further discloses detecting filter presence for off-hook equipment (column 3, lines 16-19).
12. Regarding Claim 8, Amrany further discloses performing a restart (i.e., initiating a retraining routine) (column 4, lines 16-19) and adjusting a transmit (i.e., power) level (column 4, lines 16-19).
13. Regarding Claim 9, Amrany further discloses performing a restart (i.e., initiating retraining) in response to hook status change of an unprotected phone (i.e., determining whether the inline filter is installed) (column 4, lines 12-19).
14. Regarding Claim 10, Amrany further discloses in response to indication of change, adjusting transmit level, reference impedance and matching impedance (i.e., determining whether a different modem configuration profile is appropriate and selecting the different profile) (column 4, lines 16-19).
15. Regarding Claim 11, Amrany discloses determining that a phone was taken off hook or put back on hook (i.e., a status of a telephone hookswitch) (column 4, lines 12-16) and monitoring echo (i.e., performing an echo channel measurement procedure) (column 4, lines 7-12).

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16. Regarding Claim 12, Amrany further discloses monitoring echo and received signal levels, signal to noise ratio and other signal features (i.e., determining channel transfer function) (column 4, lines 7-12).

17. Regarding Claim 13, Amrany further discloses determination of change in hookswitch status (column 4, lines 12-16) and change in echo and received signal levels, signal to noise ratio and other signal features (i.e., channel transfer function) (column 4, lines 7-12).

18. Regarding Claim 17, Amrany discloses restarting (i.e., retraining) in response to indication of (i.e., obtaining information comprising) hook state, receive signal level (i.e., channel transfer function) and echo (i.e., echo measurement) (column 4, lines 12-19).

19. Regarding Claim 23, Amrany discloses detecting that phones are on hook (i.e., a hookswitch state) or equipment is protected with micro data filters (i.e., presence of an inline filter) (column 3, lines 38-43) and in response to detected line condition (i.e., based on hookswitch state and presence of inline filter) transmitting at the highest data rate supported by the transmission line (i.e., optimizing modem parameters) (column 3, lines 46-48).

20. Regarding Claim 24, Amrany further discloses adjusting transmit level, reference impedance and matching impedance (i.e., retraining) (column 4, lines 16-19).

21. Regarding Claim 25, Amrany further discloses performing a restart (i.e., initializing) (column 4, lines 16-19).

22. Regarding Claim 26, Amrany discloses restarting (i.e., retraining) in response to indication of (i.e., determining) hook state, signal to noise ratio (i.e., line quality information) receive signal level (i.e., channel transfer function), change in receive signal level (i.e., channel response) and echo (i.e., echo response) (column 4, lines 12-19).

23. Claims 14 through 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amrany in view of Ko as applied to Claim 11 above, and further in view of Zuranski et al. (US Patent 6,445,733) and further in view of Dagdeviren (US Patent 5,999,564).

24. Regarding Claim 14, Amrany further discloses monitoring echo signal levels (i.e., performing measurement of echo testing signal) (column 4, lines 7-12). Therefore, the combination of Amrany and Ko makes obvious all elements of Claim 14 except: scheduling and acknowledging a time frame for echo measurement; and discontinuing transmission by a first modem and initiating transmission of an echo testing signal by a second modem. Zuranski discloses scheduling and acknowledging echo measurement (Fig. 9, reference 204; Fig. 8, reference 156; column 14, lines 52-55; column 15, lines 28-40). It would have been obvious to one skilled in the art at the time of the invention to apply scheduling and acknowledging as taught by Zuranski to the combination made obvious by Amrany and Ko for the purpose of improving efficiency by performing echo measurement only when needed. Therefore, the combination of Amrany, Ko and Zuranski makes obvious all elements of Claim 14 except discontinuing transmission by a first modem and initiating transmission of an echo testing signal by a second modem. Dagdeviren discloses a central site (i.e., second) modem transmitting (i.e., initiating transmission of) an echo testing signal when a client (i.e., first) modem is quiescent (i.e., discontinuing transmission of data) (column 6, lines 20-25). It would have been obvious to one skilled in the art at the time of the invention to apply one-way echo test signal transmission as taught by Dagdeviren to the combination made obvious by Amrany, Ko and Zuranski for the purpose improving the accuracy of the measurement by avoiding interfering signals.

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25. Regarding Claim 15, Amrany further discloses adjusting transmit level, reference impedance and matching impedance (i.e., retraining) in response to echo measurement (column 4, lines 12-19).

26. Regarding Claim 16, Amrany further discloses adjusting transmit level, reference impedance and matching impedance (i.e., retraining) only in response to sudden feature change (i.e., resuming normal communication otherwise) (column 4, lines 12-19).

27. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amrany in view of Ko as applied to Claim 17 above and further in view of Goldstein (US Patent 5,265,151). Amrany further discloses restarting (i.e., retraining) in response to indication of (i.e., obtaining information comprising) signal to noise ratio (i.e., noise margin) and change in signal to noise ratio (column 4, lines 12-19). Therefore, the combination of Amrany and Ko makes obvious all elements of Claim 18 except obtaining an error rate. Goldstein discloses use of error rate as a measure of line quality (column 2, lines 46-49). It would have been obvious to one skilled in the art at the time of the invention to apply the use of error rate as taught by Goldstein to the combination made obvious by Amrany and Ko for the purpose of measuring line quality.

28. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatori et al. (US Patent 6,229,855) in view of Amrany and further in view of Ko. Takatori discloses an adaptive transmitter for digital transmission that measures cable loss between the central office and the remote site (i.e., performs a channel loss measurement) (column 2, lines 37-39), and adjusts transmit power to a value that provides acceptable signal to noise ratio (i.e., determining

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a minimum required signal level and adjusting a signal level to remain above the minimum required signal level) (column 7, lines 12-25). Therefore, Takatori anticipates all elements of Claim 20 with the exception of signal level adjustment occurring in response to a change in hookswitch state determined by line current monitoring. Amrany discloses adjusting transmit level in response to change of hookswitch state (column 4, lines 16-19). It would have been obvious to one skilled in the art at the time of the invention to apply signal level adjustment in response to hookswitch state change as taught by Amrany to the transmitter taught by Takatori for the purpose of selectively compensating for voice communications. Therefore, the combination of Takatori and Amrany makes obvious all elements of Claim 20 except the use of line current measurement to determine hookswitch status. Ko discloses the use of line current measurement to determine hookswitch status for the purpose of adjusting parameters of a DSL line (column 11, lines 43-50). Ko further discloses that the current measurement method is particularly suitable for situations with multiple stations on a line (column 11, lines 59-63). It would have been obvious to one skilled in the art at the time of the invention to apply line current-based hook state determination as taught by Ko to the combination made obvious by Amrany and Takatori for the purpose of realizing the aforesaid advantage.

29. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takatori in view of Amrany and further in view of Ko as applied to Claim 20 above, and further in view of Nimmagadda (US Patent 6,426,961). As stated above apropos of Claim 20, the combination of Takatori, Amrany and Ko makes obvious all elements of that claim. Therefore, the combination makes obvious all elements of Claim 21 except adjusting signal level according to a user

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selection from among multiple signal level settings. Nimmagadda discloses user selection of signal level (column 5, lines 7-11; column 15, lines 62-67). It would have been obvious to one skilled in the art at the time of the invention to apply user selection of signal level as taught by Nimmagadda to the combination made obvious by Takatori, Amrany and Ko for the purpose of allowing the user to make the desired tradeoff between data rate and signal degradation.

30. Claims 28 through 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nimmagadda in view of Amrany and further in view of Ko.

31. Regarding Claim 28, Nimmagadda discloses a method for selection of mode of operation in a DSL system comprising determining the off-hook state (column 13, lines 2-7), determining if a request for data service will be put into a wait mode if voice service is in use (i.e., determining if modem transmission is allowed during the off hook state) (column 5, lines 7-11) and utilizing a low power mode of data operation (i.e., setting a minimum power level in support of a minimum data rate with a minimum noise margin) (column 5, lines 9-11). Therefore Nimmagadda anticipates all elements of Claim 28 with the exception of determining the off-hook state by detecting operational changes in a DSL modem. Amrany discloses determining hook state using changes in signal features (i.e., modem operation) (column 4, lines 12-16). It would have been obvious to one skilled in the art at the time of the invention to apply hook state determination based on signal features as taught by Amrany to the method taught by Nimmagadda for the purpose of simplifying hardware by determining hookstate from measurements already available to the processor. Therefore, the combination of Nimmagadda and Amrany makes obvious all elements of Claim 28 except the use of line current measurement

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to determine hookswitch status. Ko discloses the use of line current measurement to determine hookswitch status for the purpose of adjusting parameters of a DSL line (column 11, lines 43-50). Ko further discloses that the current measurement method is particularly suitable for situations with multiple stations on a line (column 11, lines 59-63). It would have been obvious to one skilled in the art at the time of the invention to apply line current-based hook state determination as taught by Ko to the combination made obvious by Nimmagadda and Amrany for the purpose of realizing the aforesaid advantage.

32. Regarding Claim 29, Nimmagadda further discloses putting data service into a wait mode (i.e., setting power to zero) until a telephone conversation is ended (i.e., waiting for an on hook transition) (column 5, lines 13-15).

33. Regarding Claim 30, the existence of low power mode inherently stores a minimum power level in a memory.

34. Regarding Claim 31, Nimmagadda further discloses initialization of a modem (column 16, lines 36-40).

35. Regarding Claim 32 Nimmagadda further discloses user indication of mode of data operation when voice service is in use (column 4, lines 65-67).

Response to Arguments

36. Applicant's arguments with respect to Claims 1 through 18, 20, 21, 23 through 26 and 28 through 32 have been considered but are moot in view of the new ground(s) of rejection. Specifically, applicant has amended these claims to include specific limitations as to how hookstate is determined and all arguments presented with respect to these claims are based on this amendment. As shown above, these new limitations are taught by Ko in the same field of

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endeavor and there is motivation to combine the teaching of Ko with the prior art previously cited.

37. Applicant's arguments with respect to Claim 22 have been fully considered but they are not persuasive. In the fourth complete paragraph on page 10 of the response filed on 15 September 2004 applicant alleges that Gross fails to teach "periodically initiating detection routines". Examiner respectfully disagrees. Gross discloses distinguishing between momentary events and significant disturbances by detecting that the significant disturbances persist over a number of frames or during a long time interval (column 10, lines 15-33). As such, Gross teaches checking for a condition during each signal frame (i.e., periodically) to determine whether the condition constitutes a significant disturbance.

Conclusion

38. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A. Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER